

REMARKS

Claims 1, 7, 12, 20, and 22 have been amended to correct informalities contained therein. Claims 1 and 22 have also been amended to clarify some of the language contained therein. Support for the clarifying language in claims 1 and 22 may be found – at least – at paragraphs [00193]-[00197] and FIG. 5. No new matter has been added. Claims 23-29 have been cancelled without disclaimer of the subject matter contained therein or prejudice to Applicants' right to file any continuing applications directed thereto. Upon entry of this Amendment, claims 1-22 remain pending.

In the Office Action dated December 9, 2005, claims 7, 12, 17, 18, and 20 were objected to because of informalities that were noted by the Examiner. Claims 7, 12, and 20 have been amended to correct the informalities noted by the Examiner. Applicants respectfully traverse the objection to claim 17 and 18, because “said lithographic projection apparatus” recited in claim 17, and “said projection apparatus” recited in claim 18 do have proper antecedent basis. “A lithographic projection apparatus” is recited in claim 1 (see line 7 of claim 1 above or line 8 of as-filed claim 1) from which claims 17 and 18 depend. Therefore, claims 17 and 18 are proper. Applicants respectfully request that the objection to claims 7, 12, 17, 18, and 20 be withdrawn.

In the Office Action, claims 1-5, 7-9, and 22 were rejected under 35 U.S.C. §102(b) as being anticipated by Sieradzki (U.S. Patent No. 5,486,080). Applicants respectfully traverse this rejection.

Independent claim 1 recites a lithographic projection assembly that includes, *inter alia*, “at least one load lock constructed and arranged to transfer an object between a first environment and a second environment, an object handler comprising a handler chamber in which said second environment prevails, ... and a lithographic projection apparatus comprising a projection chamber.” Claim 1 also recites that the handler chamber and the projection chamber can communicate for transferring of the object between the handler chamber and the projection chamber, and that the load lock comprises a load lock chamber which is provided with at least two mutually distinct object supports, each object support being configured to individually support the object. Sieradzki does not disclose or suggest all of the features of claim 1.

Sieradzki teaches the use of a high speed wafer processing apparatus (100) that uses two robots (62, 64) that are located in a transfer and process vacuum chamber (40) to move wafers (13) from two separate load locks (22a, 22b) to a processing station (25) and back to

the load locks (22a, 22b). (See Sieradzki at Abstract; FIG. 3; col. 4, ln. 44 – col. 5, ln. 8.) The only example given for the processing station (25) is an ion beam implantation station. (See Sieradzki at col. 3, lns. 17-18; col. 4, lns. 18-24; col. 6, lns. 47-51.) Sieradzki does not disclose or suggest a lithographic projection apparatus that includes a projection chamber, or a load lock chamber that is provided with at least two mutually distinct object supports, with each object support being configured to individually support the object. It is the Examiner's position that the vacuum chamber (40) is both the claimed handler chamber and the projection chamber. However, the claim specifically recites that the handler chamber and the projection chamber can communicate for transferring of the object between the handler chamber and the projection chamber. Thus, as claimed, these are clearly separate chambers. In addition, the two load locks (22a, 22b) of Sieradzki clearly define separate chambers, and each chamber contains a single cassette (30a, 30b). (See Sieradzki at FIG. 3) Moreover, Sieradzki teaches that the load locks (22a, 22b) are configured to be vented and opened separately so that one cassette (30a) may be removed and replaced with another cassette (30a') while the wafers stored in the cassette (30b) in the other lock (22b) may be processed. Sieradzki simply does not disclose or suggest all of the features of claim 1.

Accordingly, Applicants respectfully submit that claim 1 and the claims that depend from claim 1 are patentable over Sieradzki, and respectfully request that the rejection to claims 1-5, and 7-9 be withdrawn.

Independent claim 22 recites a lithographic projection assembly that includes, *inter alia*, "at least one load lock constructed and arranged to transfer an object between a first environment and a second environment; an object handler comprising a handler chamber in which said second environment prevails,... and a lithographic projection apparatus comprising a projection chamber." Claim 22 also recites that the handler chamber and the projection chamber can communicate for transferring of objects between the handler chamber and the projection chamber, and that the load lock comprises a load lock chamber which is provided with at least two mutually distinct object supports, each object support being configured to individually support the object. Claim 22 further recites that the object handler is integrated in the load lock, so that the handler chamber and the load lock chamber are a single unit. Sieradzki does not disclose or suggest all of the features of claim 22.

Sieradzki is discussed above. As discussed above, Sieradzki does not disclose or suggest – at least - a lithographic projection apparatus that includes a projection chamber, or a load lock chamber that is provided with at least two mutually distinct object supports, each

object support being configured to individually support the object. In addition, Sieradzki clearly shows that each load lock chamber (defined by their respective load locks 22a and 22b) are separate from the vacuum chamber (40) by isolation valves (23a, 23b). The robots (62, 64) are clearly located in the vacuum chamber (40) and not in the load locks (22a, 22b). As such, Sieradzki does not disclose or suggest the claimed “wherein said object handler is integrated in said load lock, so that said handler chamber and said load lock chamber are a single unit.”

Accordingly, Applicants respectfully submit that claim 22 is patentable over Sieradzki, and respectfully request that the rejection to claim 22 be withdrawn.

In the Office Action, claims 1, 10, 11, 13, 14, and 22 were rejected under 35 U.S.C. §102(b) as being anticipated by Fuse et al. (U.S. Patent No. 5, 217,501). Applicants respectfully traverse this rejection.

Claim 1 is discussed above. Fuse et al. does not disclose or suggest all of the features of claim 1. Fuse et al. teaches the use of a vertical wafer heat treatment apparatus for forming a film on and dry etching a plurality of wafers that are stored in a wafer boat (18). (*See* Fuse et al. at Abstract and FIG. 1.) A series of load lock chambers (40, 42, 44) are used to transport wafers (20) into and out of the apparatus. (*See* Fuse et al. at col. 4, lns. 7-21; FIG. 1.) The first load lock chamber (40) is connected to a process tube (10) that constitutes a vertical heat treatment unit. (*See* Fuse et al. at col. 1, lns. 28-31; col. 4, lns. 7-8; FIG. 1.) The second load lock chamber (42) is connected to the first load lock chamber (40) and a dry etching unit (80). (*See* Fuse et al. at col. 4, lns. 10-12, 42-44; FIG. 2.) The second load lock chamber (42) includes a wafer convey arm (60) that is used to move wafers in and out of the first load lock chamber (40), the dry etching unit (80), and the third load lock chamber (44). (*See* Fuse et al. at col. 5, lns. 28-34; col. 5, ln. 66 - col. 6, ln. 52; FIG. 2.) Fuse et al. does not disclose or suggest a lithographic projection apparatus comprising a projection chamber.

It is the Examiner’s position that the third load lock chamber (44) of Fuse et al. is the claimed projection chamber. However, Fuse et al. is completely devoid of any mention of a lithographic projection apparatus that includes a projection chamber between which objects can be moved with a handler chamber. The third load lock chamber (44) of Fuse et al. is explicitly described as the chamber in which wafer stockers (71, 72) that are capable of stocking a number of wafers (20) are arranged. (*See* Fuse et al. at col. 4, lns. 26-28; FIG. 2.) There is simply no teaching or suggestion in Fuse et al. that the third load lock chamber (44) is or even could be a projection chamber of a lithographic projection apparatus.

Accordingly, Applicants respectfully submit that claim 1 and the claims that depend from claim 1 are patentable over Fuse et al., and respectfully request that the rejection to claims 1, 10, 11, 13, and 14 be withdrawn.

Claim 22 is discussed above. Fuse et al. is also discussed above. Because Fuse et al. does not disclose or suggest a lithographic projection assembly that includes, *inter alia*, lithographic projection apparatus that includes a projection chamber, Applicants respectfully submit that claim 22 is patentable over Fuse et al.

Accordingly, Applicants respectfully request that the rejection to claim 22 be withdrawn.

In the Office Action, claims 1, 5, 6, and 17-22 were rejected under 35 U.S.C. §102(e) as being anticipated by del Puerto et al. (U.S. Patent Application Publication No. 2003/0082466). Applicants respectfully traverse this rejection.

Claim 1 is discussed above. Del Puerto et al. does not disclose or suggest all of the features of claim 1. Del Puerto et al. discloses a lithography system (100) that includes two alignment load locks (104, 105), a wafer exchange chamber (106), a patterning chamber (111), and a holding load lock (114). (*See* del Puerto et al. at [0030]-[0034].) A robot (109) is located in the wafer exchange chamber (106) and is used to transfer wafers to from the alignment load locks (104,105) and holding load lock (114) to the patterning chamber (111). (*See* del Puerto et al. at [0031]-[0034]; FIG. 1.) Del Puerto et al. also discloses that the wafer (207) may be supported by wafer supports (204, 205, 206) and clamped on chuck (211) within the alignment load locks (104, 105). (*See* del Puerto et al. at [0039]-[0040]; FIG. 2A.) It is the Examiner's position that the patterning chamber (111), is both the claimed projection chamber and the load lock chamber which is provided with at least two mutually distinct object supports. This is an improper application of the reference.

MPEP §2131 states that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131, quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). MPEP §2131 also states "[t]he elements must be arranged as required by the claim." MPEP §2131, quoting *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Because del Puerto et al. does not disclose (or even suggest) at least one load lock that is constructed and arranged to transfer an object between a first environment and a second environment and comprises a load lock chamber which is provided with at least two mutually distinct object supports, with each object support being

configured to individually support the object, and a projection chamber, del Puerto et al. cannot anticipate claim 1.

Accordingly, Applicants respectfully submit that claim 1 and the claims that depend from claim 1 are patentable over del Puerto et al., and respectfully request that the rejection to claim 1, 5, 6, and 17-21 be withdrawn.

Claim 22 is discussed above. Del Puerto et al. is discussed above. Because del Puerto et al. does not disclose (or even suggest) at least one load lock that is constructed and arranged to transfer an object between a first environment and a second environment and comprises a load lock chamber which is provided with at least two mutually distinct object supports, with each object support being configured to individually support the object, and a projection chamber, del Puerto et al. cannot anticipate claim 22.

Accordingly, Applicants respectfully submit that claim 22 is patentable over del Puerto et al., and respectfully request that the rejection to claim 22 be withdrawn.

In the Office Action, claim 12 was rejected under 35 U.S.C. §103(a) as being unpatentable over Fuse et al. in view of Hirayanagai (U.S. Patent Application Publication No. 2004/0109152). Applicants respectfully traverse this rejection.

Claim 12 depends from claim 1. As discussed above, claim 1 is patentable over Fuse et al. Hirayanagai does not make-up for the deficiencies of Fuse et al.

Hirayanagai discloses a system for handling reticles and cassettes that carry reticles. (See Hirayanagai at Abstract.) In one embodiment, a vacuum reticle library (64) is connected to and is at the same pressure as a reticle chamber (53) within a microlithography system. (See Hirayanagai at [0036]; FIG. 1(A).) A gate valve (62) is interposed between the vacuum reticle library (64) and a reticle load lock chamber (61). (See Hirayanagai at [0036]; FIG. 1(A).) Reticles (80) may be transported from an atmospheric-pressure reticle library (66) to the vacuum reticle library (64) (and vice-versa) via the reticle load lock chamber (61). (See Hirayanagai at [0038], [0042]; FIG. 1(A).) The reticle load lock chamber (61) is not provided with at least two mutually distinct object supports, with each object support being configured to individually support the object, as recited by claim 1, and (therefore) claim 12.

In another embodiment, Hirayanagai discloses that a plurality of load lock chambers (61') may be used instead of the vacuum reticle library (64), and that each load lock chamber (61') may hold a cassette (67) that includes multiple reticles (80). (See Hirayanagai at [0044]; FIG. 2.) Hirayanagai does not disclose or suggest that each individual load lock chamber (61') is provided with at least two mutually distinct object supports, with each

object support being configured to individually support the object, as recited by claim 1, and (therefore) claim 12.

Moreover, the prior art depicted in FIG. 5 of Hirayanagai shows a single load lock chamber (111), but does not teach or suggest that the load lock chamber (111) is provided with at least two mutually distinct object supports, with each object support being configured to individually support said object, as recited by claim 1, and (therefore) claim 12. (See Hirayanagai at [0003]-[0004]; FIG. 5.)

Accordingly, Applicants respectfully submit the claim 12 is patentable over Fuse et al. in view of Hirayanagai, because the combination of Fuse et al. and Hirayanagai – even if proper, which Applicants in no way concede – does not disclose or suggest all of the features of claim 12, and respectfully request that the rejection to claim 12 be withdrawn.

In the Office Action, claims 15 and 16 were rejected under 35 U.S.C. §103(a) as being obvious over del Puerto et al. Applicants respectfully traverse this rejection.

Claims 15 and 16 depend from claim 1. As discussed above, claim 1 is patentable over del Puerto et al. Therefore, for at least the same reasons stated above, claims 15 and 16 are also patentable over del Puerto et al.

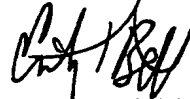
All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited. If any point remains at issue which the Examiner feels may best be resolved through a personal or telephone interview, please contact the undersigned at the telephone number below.

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Respectfully submitted,

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